ANNALS OF OTOLOGY, RHINOLOGY & LARYNGOLOGY

ANNALS OF HEAD & NECK MEDICINE & SURGERY®

— *Founded in 1892* —

Volume 98
January-December 1989
Issues 1-12, Supplements 138-143

Published by

ANNALS PUBLISHING COMPANY
4507 LACLEDE AVENUE
ST LOUIS, MISSOURI 63108

Copyright© 1989, Annals Publishing Company

ANNALS OF OTOLOGY, RHINOLOGY & LARYNGOLOGY

ANNALS OF HEAD & NECK MEDICINE & SURGERY®

— Founded in 1892 —

Editor

BRIAN F. McCABE, MD
Iowa City

Associate Editors

CHARLES D. BLUESTONE, MD
Pittsburgh

BARBARA A. BOHNE, PHD
St Louis

LEE A. HARKER, MD
Iowa City

Board of Editors

JOHN G. BATSAKIS, MD ..... Houston
PAUL BRETLAU, MD ..... Copenhagen
JACK D. CLEMIS, MD ..... Chicago
ALFRED C. COATS, MD ..... Houston
CHARLES W. CUMMINGS, MD ..... Seattle
LAWRENCE W. DESANTO, MD ..... Scottsdale, Ariz
MANUEL DON, PHD ..... Anaheim, Calif
PATRICK J. DOYLE, MD ..... Vancouver
ARNDT J. DUVALL III, MD ..... Minneapolis
ALFIO FERLITO, MD ..... Padua, Italy
UGO FISCH, MD ..... Zurich
GERALD B. HEALY, MD ..... Boston
WILLIAM F. HOUSE, MD ..... Los Angeles
STEVEN K. JUHN, MD ..... Minneapolis
JEROME O. KLEIN, MD ..... Boston
DAVID J. LIM, MD ..... Columbus
FRANK E. LUCENTE, MD ..... New York
JOSEF MILLER, PHD ..... Ann Arbor
WILLIAM W. MONTGOMERY, MD ..... Boston
EUGENE N. MYERS, MD ..... Pittsburgh
YASUYA NOMURA, MD ..... Tokyo
FRANK N. RITTER, MD ..... Ann Arbor
ROBERT J. RUBEN, MD ..... Bronx
JACOB SADÉ, MD ..... Kfar Saba, Israel
ISAMU SANDO, MD ..... Pittsburgh
CLARENCE T. SASAKI, MD ..... New Haven
HARVEY M. TUCKER, MD ..... Cleveland

Imaging Editor

KENNETH D. DOLAN, MD ..... Iowa City

Book Review Editor

DENNIS G. PAPPAS, MD ..... Birmingham, Ala

Emeritus Board Members

MAXWELL ABRAMSON, MD ..... New York
WESLEY H. BRADLEY, MD ..... Albany
D. THANE CODY, MD ..... Jacksonville, Fla
SEYMOUR COHEN, MD ..... Los Angeles
CHARLES F. FERGUSON, MD ..... Sarasota, Fla
JOHN M. FREDRICKSON, MD ..... St Louis
STANTON A. FRIEDBERG, MD ..... Chicago
RICHARD R. GACEK, MD ..... Syracuse
GEORGE A. GATES, MD ..... St Louis
JOSEPH L. GOLDMAN, MD ..... New York
JEROME C. GOLDSTEIN, MD ..... Albany
VICTOR GOODHILL, MD ..... Los Angeles
D. F. N. HARRISON, MD ..... London
VINCENT J. HYAMS, MD ..... Washington, DC
L. B. W. JONGKEES, MD ..... Amsterdam
SAM E. KINNEY, MD ..... Cleveland
JOHN A. KIRCHNER, MD ..... New Haven
FRED H. LINTHICUM, JR, MD ..... Los Angeles
CARY N. MOON, JR, MD ..... Charlottesville
MICHEL PORTMANN, MD ..... Bordeaux, France
LORING W. PRATT, MD ..... Waterville, Me
GUNNER O. PROUD, MD ..... Kansas City, Kan
WILLIAM H. SAUNDERS, MD ..... Columbus
F. BLAIR SIMMONS, MD ..... Palo Alto
CATHERINE A. SMITH, PHD ..... Portland, Ore
RUEDIGER THALMANN, MD ..... St Louis
PAUL H. WARD, MD ..... Los Angeles
ALFRED L. WEBER, MD ..... Boston

ANNUAL INDEX

AUTHORS

Abramson AL, 70
Adelman C, 283
Adour KK, 196
Afrassiabi A, 935
Aguilar EA, 807
Aiyer CR, 157
Alessi DM, 586
Alexander KJ, 910
Altmannsberger M, 256
Altschuler RA, 965
Anderson DJ, 965
Andersson B, suppl 139:23
Anonsen CK, 677
Applebaum EL, 130
Arfken C, 573 (letter to editor)
Arnold W, suppl 139:19 (correspondent)
Arnstein DP, 796
Atkinson MWA, 971
Avery CA, suppl 138
Aviv JE, 339

Bagger-Sjöbäck D, suppl 139:46; 434
Bakaletz LO, suppl 139:23; 278
Barenkamp SJ, suppl 139:23, 33
Barnes CH, 611
Bar-Ziv J, 85 (letter to editor)
Bastian RW, 693
Batsakis JG, 83, 162, 241, 320, 400, 487, 571, 659, 749, 834, 919, 991
Beamis JF Jr, 890
Beckerman RC, 174
Beckers A, 191
Bell TS, 220
Benjamin B, 417
Bennett JA, 455
Berci G, 586
Berg PA, 537
Berke GS, 145, 220, 796
Berktold RE, 831
Berlinger NT, 718
Bernard PJ, 684
Bernstein JM, suppl 139:23
Bettez M, 988
Bieluch VM, 332
Biller HF, 21, 339, 684
Black FO, 884
Blitzer A, 93
Blom ED. 921
Bluestone CD, suppl 139:14; suppl 143 (ed):4
Bock GR, suppl 143:14, 39
Bonfils P, 326
Brackmann DE, 160
Brantigan CO, 573 (letter to editor)
Brin MF, 93
Brinton CC, suppl 139:23
Brook I, 293, 323, 426
Brookler KH, 753 (letter to editor)
Browning GG, 245
Brusis T, 615

Cahill DR, 141
Cain BH, 960
Calcaterra TC, 113, 896
Camilon FS Jr, 213
Cantrell RW, 125, 235
Carlo WA, 251
Carmichael CL, 837, 838 (book reviews)
Casler JD, suppl 140:9, 13
Casselbrant ML, suppl 139:11, 14
Chait RH, suppl 140:9, 13
Chasin WD, 332
Chatburn RL, 251
Cheney ML, 27, 848
Chinnici JC, 597
Chiu M, 461
Cho HT, 59
Chodosh P, 74
Chole RA, 461, 761
Clark GM, 591
Clary RA, 322 (letter to editor)
Close LG, 98
Cohen NL, suppl 142:8; 754 (letter to editor)
Cohen SR, 213
Cole RR, 807
Collins SL, 693
Conley JJ, 845
Constable WC, 125, 235
Cooper DS, 153
Cooper JC Jr, suppl 138
Cooper KA Jr, 1 (editorial)
Copeland SK, 85 (book review)
Cotton RT, 81
Coutras S, 602
Cremer MA, 643
Crumley RL, 87
Cunningham MJ, 396

Daly KA, suppl 139:11
DeConti RC, 455
Dehesdin D, 530
DeLozier HL, 644
DeMaria TF, suppl 139:23, 33
Dennis DP, 930
DeSanto LW, 2
DiScenna AO, 548
Diven WF, suppl 139:23
Dobie RA, 867
Dodd KT, suppl 140:17
Dodds B, 8, 907
Dolan KD, 318, 346, 747, 916, 988
Downs MP, suppl 139:46
Doyle WJ, suppl 139:14, 19, 33; suppl 143:22
Ducastelle T, 530
Dumon J-F, 890
Duncavage JA, 581

Eden AR, suppl 139:14, 19
Ekelman BL, 548
El Naggar A, 919
Eliachar I, 37
Ellison D, 113
Esaki Y, 301, 350, 479
Esses BA, 573 (letter to editor)

Fabian RL, 576 (book review)
Fahn S, 93
Ferguson JL, 110
Ferlito A, 403 (obituary); 780
Fernandes CMC, 269
Ferrer HP, suppl 139:39
Fiellau-Nikolajsen M, suppl 139:39
Finkelstein DM, 707
Finkelstein Y, 85 (letter to editor); 267
Fishman GA, 364
Fjermedal O, 767
Fletcher ER, suppl 140:35
Flexon PB, 27
Forrez G, 191
Fortune MA, 496
Frankander L, 434
Franks R, 508
Fransen JAM, 635
Franz BK-HG, 591
Freeman TJ, 718
Friedman CD, 485
Friedman M, 130
Friedmann I, 780
Fuenning C, 298
Fujii M, 732
Fujiyoshi T, 273, 980
Fukaya T, 438
Furman JMR, 551, 625; 753 (letter to editor)
Furuya H, 350, 479

Gacek RR, 202
Gantz BJ, suppl 142:12; 346
Garinther GR, suppl 140:42
Garner SL, 611
Gatehouse S, 245
Gates GA, suppl 138; suppl 139:39; 573 (letter to editor); 926
Geraghty JJ, 916
Gerratt BR, 145
Gerull G, 605
Gibson WS, 502
Giebink GS, suppl 139:23, 33
Glynn RJ, 411
Golden GS, 755
Goldfarb R, 74
Gomes MR, 772
Goto N, 732
Goycoolea MV, suppl 139:19
Gravel JS, suppl 139:46
Gray SD, 81, 577, 668
Greene PE, 93
Griffith SR, 278
Grossman JE, 389
Grote JJ, 635
Grybauskas VT, 130

Habbema JDF, 839
Hahn SS, 235
Hain TC, 741
Halperin D, 641
Hamaguchi Y, 287, 472, 563
Hamaker RC, 921
Hamernik RP, suppl 140:23
Hannley M, 677
Hanson DG, 145, 220, 586
Harris JP, 447
Harrison HC, 322 (letter to editor)
Harvey JE, 217
Hasegawa S, 384
Hattori M, 443
Hattori S, 157
Haughey BH, 573 (letter to editor)
Hawke WM, suppl 139:19
Hawkins JE, suppl 143:6, 28
Hayes RB, 839
Heading RC, 405
Healy GB, 821
Hecox KE, 308
Helliwell TR, 971
Hellström S, suppl 139:33; 736

Henry KG, 369
Hesseling SC, 635
Hibi S, 135
Himelfarb MZ, 641
Hinkle WG, 755
Hinojosa R, suppl 143:19, 24
Hirade Y, 791
Hirano M, 135, 713, 791
Hirata K, 443
Hirokawa R, 15, 323
Hisa Y, 202
Holinger LD, 702
Holmes EC, 113
Holmquist J, suppl 139:14
Honda K, suppl 139:14
Honjo I, suppl 139:14
Howell L, 185
Howie VM, suppl 139:23, 42
Hoyt R, suppl 140:17
Huang T S, 393
Hulshof JH, 618
Hussl B, suppl 139:10

Ikeda K, 379
Ikeda M, 975
Ikeoka H, 301, 350, 479
Inglis A, 417
Ingvarsson L, suppl 139:11
Isaacs JH Jr, 209
Isaacson G, 15
Ishibe T, 648
Ishii T, suppl 139:19
Isshiki N, 777
Iwanaga T, 384

Jackler RK, 813
Jackson RM, 171
Jacobs EE Jr, 848
Jacobs JB, 838 (book review)
Jacobson GP, 369
Jahrsdoerfer RA, 807
Jerger J, suppl 139:39
Jiang J, 668
Johns CJ, 298
Johnson GD, 644
Juhn SK, suppl 139:23; 287, 472, 563
Jung TTK, suppl 139:19

Kääriäinen H, 863
Kabelitz D, 179
Kaiser TN, 217
Kalb JT, suppl 140:42
Kamerer DB, 551; 753 (letter to editor)
Kandalaft P, 240
Kaniff T, 693
Karakashian M, suppl 139:46
Karjalainen S, 863
Karma P, suppl 139:11, 23
Kashima H, 930
Katirji MB, 8, 907
Kato H, 523
Kato M, 479
Kato S, 350, 479
Katon WJ, 867
Kavanagh KT, 508, 755
Kawauchi H, 980
Keithley EM, 447
Kelly MD, 235
Kennedy DW, 901
Kersh CR, 235
Kessler K, suppl 142:2
Kimmelman CP, 721
Kirchner JA, 421, 661
Kirchner JC, 421
Kirsh JC, 707
Klein DL, suppl 139:23
Klein JO, suppl 139:10, 46
Klein R, 537
Kmucha ST, 15
Kodama K, 761
Kohut RI, suppl 143:11
Kojima H, 777
Koltai PJ, 955
Komatsu T, 157
Konrad HR, suppl 143:17, 42, 45
Korovin GS, 59
Koshimo H, 301
Koufman JA, 41
Kraus WM, 339
Kremer S, 451
Krespi YP, 105
Kuijpers W, suppl 139:19, 33
Kumar N, 8
Kumazawa T, suppl 139:14 (correspondent)
Kuriloff DB, 59, 74, 824
Kurita S, 135
Kurono Y, 273
Kusakari J, 379
Kuzma JA, 591

Lalakea ML, 677
Laszig R, 591
Laukli E, 429, 767
Laurent C, 736
Lawson W, 21, 684
Leake PA, 813
LeBenger J, 684
Lehnhardt E, 591
Leigh RJ, 548
Levi H, 283
Levine HL, 46
Levine PA, 125
Levit I, 451
Levy J, 70
Lilja K, 736
Lim DJ, suppl 139 (ed): 7 (introduction), 19; 278
Linder N, 283
Lipton RJ, 141
Lo WWM, 160
Loftin L, 575 (book review)
Looman C, 839
Lowder MW, suppl 142:12
Lowry JK, 575, 993 (book reviews)
Lucente FE, 55, 721
Luckhaupt H, 615
Luna MA, 162
Lundgren K, suppl 139:11, 42
Luntz M, 355, 630
Lusted HS, 491
Lutgert RW, 635

Maale GE, 950
Macaluso RA, 502
Maddern BR, 174, 828
Mafee MF, 66
Maharaj D, 269
Mair IWS, 429, 767
Majima Y, 443
Malmgren LT, 202
Maniglia AJ, 8, 907
Manning JT, 83
Maran AGD, 405
Marchant CD, suppl 139:11, 39
Maren TH, 209
Marie JP, 530
Martin ET, 332
Mathew O, 119
Matragrano A, 502
Matz GJ, 693
Maves MD, 577, 611, 988
Maw AR, suppl 139:42 (minority report)
McCabe BF, 1 (editorial); suppl 142:12; 243 (editorial); 577
McCaffrey TV, 141
McClintock F, 404, 837 (book reviews)
McCollough EG, 86 (book review)
McKenzie RA, 838 (book review)
McKerrow WS, 813
McMahon MF, 31
Meltzer CJ, 105
Merchant SN, 873
Merwin GE, 209
Meyer DH, 364
Meyerhoff WL, suppl 139:42; suppl 143:25; 950
Miller E, 496
Miller RP, 81
Miyamoto RT, suppl 142:2
Mogi G, suppl 139:23, 33; 273, 523, 980
Montgomery WW, 27, 848
Morel B, 339
Morgenstern C, 975
Morishita A, 443
Morizono T, suppl 139:46; 563
Mrowinski D, 605
Mueller DP, 346
Mullooly V, 70
Mundle TG, suppl 140:17
Myer CM III, 81
Myres WA, suppl 142:2
Myssiorek D, 655

Nadol JB Jr, 336, 411; suppl 143:33, 47
Nakai Y, 301, 350, 479
Nakano Y, 384
Nashner LM, 884
Natividad M, 796
Naunton RF, suppl 139:9 (special remarks), 10; suppl 143 (ed):5 (special remarks)
Neel HB III, 110
Neely JG, 726
Neher A, 836 (letter to editor)
Neis PR, 31
Nelson DA, 859
Nelson JD, suppl 139:42
Nemiroff PM, 569
Niparko JK, 965
Nomura Y, 438; suppl 143:15, 38, 43
Norfray JF, 569
Norré ME, 191
Norris CW, 31
Northern JL, suppl 139:39
Noyek AM, 707
Nutman J, 251
Nylén O, suppl 139:23

Odrezin GT, 404 (book review)
Ogra PL, suppl 139:23
Ohashi T, 556
Ohashi Y, 301, 350, 479
Ohene-Frempong K, 174
Ohyama M, suppl 139:10
Oliveira CA, 772
Olsen KD, 2
Ongseng F, 74
Oppenheimer RW, 702
Osberger MJ, suppl 142:2
Oshiro EM, 491
Ossoff RH, 581

Ostfeld E, suppl 139:14
Out CJ, 635

Pajarillo PR, 85 (letter to editor)
Pakarinen L, 863
Paparella MM, suppl 139:19, 46; 359
Papo J, 641
Pappas DG, 85, 86, 575, 837, 838, 993, 994 (book reviews)
Parnes SM, 455
Patrick JF, 591
Pearson BW, 2
Pedersen S, 429
Pelton SI, suppl 139:23, 33
Persky MS, 754 (book review)
Pessah N, 209
Peterka RJ, 884
Phillips YY, suppl 140 (ed): 3, 17, 35
Piazza L, 364
Pincus RL, 824
Pindzola RH, 960
Pinheiro LCF, 772
Piris J, 405
Plester D, 537
Pon CR, 466
Pope ML, suppl 142:2
Prellner K, suppl 139:23
Price GR, suppl 140:42
Prihoda TJ, suppl 138
Pryde A, 405

Ranney JB, suppl 139:39
Rao AJ, 157
Rapoport Y, 641
Rauch SD, 873
Raymond AK, 487, 571
Reams C, 502
Reed HT, 174; 753 (letter to editor)
Reilly JS, 576 (book review)
Renshaw J, suppl 142:2
Renvall U, suppl 139:39
Rice DH, 153, 171; 753 (letter to editor)
Richmond DR, suppl 140:35
Rizzo TA, 228
Robbins AJ, suppl 142:2
Roberto M, suppl 140:23
Roberts JK, 37
Robillard H, 466
Robinson RA, 611
Rock EH, suppl 141
Roland PS, 950
Rosenbaum ML, 907
Rosenfeld R, 21
Rothfus WE, 396
Rothstein SG, 754 (book review)
Roydhouse N, suppl 139:11, 42
Ruben RJ, suppl 139:39, 46
Rueger RG, 396
Ryan AF, suppl 139:23, 33
Rybak LP, 569
Rynnel-Dagöö B, suppl 139:23

Sadé J, 355, 451, 630
Sadler-Kimes D, 854
Saito Y, 379
Sakaguchi S, 713
Sakai CS, 867
Sakakura Y, suppl 139:23; 287, 443, 472, 563
Sanada T, 791
Sanders I, 339
Sando I, suppl 139:19; 515, 543; suppl 143:22, 35
Sant'Ambrogio F, 119
Sant'Ambrogio G, 119
Santos PM, 935
Sasaki CT, 421
Schachern PA, 359
Schaefer SD, 98
Scheetz MD, suppl 143 (assoc ed)
Schild JA, 66
Schneiderman TS, 86, 575, 837 (book reviews)
Schuknecht HR, suppl 143:10, 17, 40, 46
Schuller DE, 910
Schwartz IR, suppl 143:40
Senant J, 530
Sercarz J, 113
Sessions DG, 217
Shaalan H, 901
Shapiro SM, 308
Shapiro WH, suppl 142:8
Shapshay SM, 821, 890
Shatz A, 451
Shea DA, 359
Shelton C, 160, 491
Shibahara Y, 543
Shimada Y, 157
Shoji K, 777
Shupert CL, 884
Shurin PA, suppl 139:23
Siegel MI, 854
Simms DL, 726
Singer MI, 921
Sipilä P, suppl 139:23
Sisson GA Sr, 485
Smith JD, 185
Smith ME, 896
Smith TR, 755
Smyth GDL, 803
Sneige N, 241, 320, 400
Sobol SM, 59
Sogg A, 699
Som P, 21
Sorensen K, 8, 907
Spaulding CA, 125, 235
Spinella MJ, 644
Stapells DR, 941
Stell PM, 971
Stenfors L-E, suppl 139:14
Stewart I, suppl 139:39
Stewart JL, 200
Stool SE, 828
Straathof CSM, 741
Strauss M, 836 (letter to editor)
Stuhmiller JH, suppl 140:53
Sullivan MD, 867
Suzuki M, 980

Taira T, 777
Takagi A, 515; suppl 143:35
Takahashi H, suppl 143:35
Takahashi S, 384
Takasaka T, suppl 139:19; 379
Takeuchi K, 443
Tally FP, 332
Talmi YP, 85 (letter to editor); 267
Tami TA, 602
Tate NP, 755
Teele DW, suppl 139:11, 39
Tengblad A, 736
Teräsvirta M, 863
Terry PB, 298
Thedinger BA, 873
Thoma J, 605
Thomander L, 434
Thompson JW, 213
Thomsen J, suppl 139:42
Thomsen JR, 955
Tijssen MAJ, 741
Timpl R, 537
Titze IR, 668
Todhunter JS, 854
Tomiyama S, 447
Tomada K, 556
Toohill RJ, 581
Toriumi DM, 130, 485, 831
Tos M, suppl 139:10, 11; 994 (book review)
Toubbeh M, 240
Trapp TK, 220, 796
Tucker HM, 37, 52, 674
Tucker JA, 926
Turner PA, 27
Turrentine GA, suppl 140:23
Tyler RS, 322 (book review)

Uddman R, suppl 139:19
Uziel A, 326

Van Blitterswijk CA, 635
Van Cauwenberge PB, suppl 139:10, 11
Van der Maas PJ, 839
Van der Mey AGL, 618
Van der Puije PD, 466
Van Dulken H, 618
Van Krieken JHJM, 618
Van Laer CG, 971
Van Muijen GNP, 635
Van Seters AP, 618
Varsano IB, 389
Vartiainen E, 863
Verduijn PG, 839
Vielvoye J, 618
Vollrath M, 256
Volovitz BM, 389
Von Haacke NP, 405
Von Scheel J, 605
Vrabec DP, 502

Wall C III, 551, 625; 753 (letter to editor)
Waltzman SB, suppl 142:8
Wang KP, 298
Ward PH, 145, 220
Warman S, 655
Watanabe N, 523
Weinstein GS, 845
Weissler MC, 496
Weissman BM, 548
Welker KB, 37
Welsh JJ, 228, 597
Welsh LW, 228, 597
Wen B-C, 318
Wenig BL, 70
Werber JL, 55
Werkhaven J, 828
Wexler DB, 668
Weymuller EA Jr, 935
White A, 405
Wielinga EWJ, 803
Wiler JA, 965
Wilson JA, 405
Wilson JF, 602
Wolff AP, 240
Wood RP II, suppl 139:11
Woodson GE, 119, 373
Wright CG, suppl 143:25
Wu B-L, 339
Wustrow TPU, 179

Xue X, 965

Yaffe D, 85 (letter to editor)
Yamagishi M, 384
Yamaguchi N, suppl 143:22
Yanagisawa E, 15
Yanagita N, 157
Yeakley JW, 807
Yellin W, 950
Yelverton JT, suppl 140:35
Yocum P, 293
Yoo TJ, 648
Yoon TH, 359
Yoshida GY, 921
Yoshida T, 713, 791
Yoshie N, 556
Young Y-S, 336, 411
Yuh WTC, 747, 988
Yukizane K, 135
Yurawecz J, 574 (letter to editor)

Zajtchuk JT, suppl 140 (ed): 3, 5, 9, 13
Zanetti FR, 537
Zee DS, 741
Zikk D, 641
Zohar Y, 85, 836 (letters to editor); 267

SUBJECTS

Abscesses
Delayed airway obstruction and neck abscess following manual strangulation injury, 824

Acquired immunodeficiency syndrome
Acute airway obstruction due to necrotizing tracheobronchial aspergillosis in immunocompromised patients: new clinical entity, 718

Adenocarcinoma
Low-grade and high-grade adenocarcinomas of salivary duct system, 162

Adenoidectomy
Chronic secretory otitis media: effects of surgical management, suppl 138

Adenoma
Large pituitary adenomas with extension into nasopharynx. Report of three cases with review of literature, 618

Adenomatous tumors
Adenomatous tumors of middle ear, 749

Aerodigestive tracts
Basaloid-squamous carcinomas of upper aerodigestive tracts, 919

Airway
Acute airway obstruction and achalasia of esophagus, 641
Acute airway obstruction due to necrotizing tracheobronchial aspergillosis in immunocompromised patients: new clinical entity, 718

Allergy
Increased ciliary beating frequency of nasal mucosa following immunotherapy for allergy, 350
Long-term results of ethmoid surgery, 699

Aneurysm
Extracranial carotid artery aneurysm: unusual neck mass in young adult, 396

Angiofibroma
Surgical experience with juvenile nasopharyngeal angiofibroma, 269

Animal model
Ferret model for acquired subglottic stenosis, 910

Antibody
High antibody levels against mouse laminin with specificity for galactosyl-(α1-3)galactose in patients with inner ear diseases, 537
Immunohistochemical analysis of olfactory mucosa by use of antibodies to brain proteins and cytokeratin, 384

Antrostomy
Reevaluation of maxillary sinus surgery: experimental study in rabbits, 901

Armored vehicles
Middle ear injury in animals exposed to complex blast waves inside armored vehicle, suppl 140:17

Arslan, Michele. Obituary, 403

Aspergillosis
Acute airway obstruction due to necrotizing tracheobronchial aspergillosis in immunocompromised patients: new clinical entity, 718

Asymmetry
Asymmetry of laryngeal framework: morphologic study of cadaver larynges, 135

Atelectasis
Gaseous pathways in atelectatic ears, 355

Atresia
Choanal atresia: treatment trends in 47 patients over 33 years, 110

Audiometry
Air conduction thresholds and secretory otitis media: conventional and extra-high frequency audiometric comparison, 767

Auditory damage
Damage of auditory system associated with acute blast trauma, suppl 140:23

Auditory handicap
Toward measure of auditory handicap in Army, suppl 140:42

Bacteriology
Bacteriology of chronic maxillary sinusitis in adults, 426
Quantitative bacterial cultures and beta-lactamase activity in chronic suppurative otitis media, 293
Recurrent tonsillitis: histologic and bacteriologic evaluation, 332

Bell's palsy
Mona Lisa syndrome: solving enigma of Gioconda smile, 196

Bicarbonate
Lack of effect of carbonic anhydrase inhibition on direct measurements of endolymph bicarbonate, 209

Blast injury
Effects of blast overpressure on ear, suppl 140

Blood flow
Regional blood flow to canine vocal fold at rest and during phonation, 796

Blood transfusions
Blood transfusions and recurrence in head and neck cancer, 171

Bone
Auditory brain stem responses to bone-conducted tones in infants, 941
Cochlear hair cell stereocilia loss in LP/J mice with bone dysplasia of middle ear, 461
Osteomyelitis of frontal bone, 848

Book Reviews
Alpiner JG, McCarthy PA, eds. *Rehabilitative Audiology: Children and Adults*, 322

Anderson JR, Ries WR. *Rhinoplasty: Emphasizing the External Approach*, 86
Arnold WJ, Laissue JA, Friedmann I, Naumann HH. *Diseases of the Head and Neck: An Atlas of Histopathology*, 575
Babighian G, ed. *Otology Today*, 575
Brodnitz FS. *Keep Your Voice Healthy*, 837
Clark GM, Blamey PJ, Brown AM, et al. *The University of Melbourne–Nucleus Multi-Electrode Cochlear Implant*, 837
Crelin ES. *The Human Vocal Tract: Anatomy, Function, Development, and Evolution*, 404
Cremers C, Hoogland G, eds. *Pediatric Otology*, 838
Fisch L. *Investigating Hearing in Children*, 575
Fisch U, Mattox D. *Microsurgery of the Skull Base*, 994
Fried MP, ed. *The Larynx: A Multidisciplinary Approach*, 754
Graham MD, Kemink JL, eds. *The Vestibular System: Neurophysiology and Clinical Research*, 837
Hawke M, Jahn AF. *Diseases of the Ear: Clinical and Pathologic Aspects*, 86
Kerr AG, series ed. *Scott-Brown's Otolaryngology*, 993
Loré JM Jr. *An Atlas of Head and Neck Surgery*, 754
Maatman G. *High-Resolution Computed Tomography of the Paranasal Sinuses, Pharynx and Related Regions — Impact of CT Identification on Diagnosis and Patient Management*, 404
McCollough EG, Langsdon PR. *Dermabrasion and Chemical Peel. A Guide for Facial Plastic Surgeons*, 838
Miller AL. *A Practical Guide to Hearing Aid Usage*, 838
Pogosov VS, Antoniv VF. *Microscopy and Microsurgery of the Larynx and Laryngopharynx*, 576
Ruenes R, De La Cruz A. *Otologic Radiology With Clinical Correlations*, 85
Tucker HM. *The Larynx*, 576
Veldman JE, McCabe BF, eds. *Oto Immunology*, 86

Botulinum
Botulinum toxin for relief of bilateral abductor paralysis of larynx: histologic study in animal model, 213
Botulinum toxin injection for treatment of oromandibular dystonia, 93

Brain stem auditory evoked response
Analog and digital filtering of brain stem auditory evoked response, 508
Auditory brain stem response monitoring during middle ear surgery, 605
Auditory brain stem responses to bone-conducted tones in infants, 941
Auditory nerve and brain stem evoked response thresholds in infants treated with gentamicin as neonates, 283
Brain stem auditory evoked potentials in jaundiced Gunn rats, 308
Laryngeal brain stem evoked response, 677

Bronchoscopy
Low frequency oscillatory ventilation through suction channel of pediatric bronchoscope, 251

Burns
Management of patients with glottic and subglottic stenosis resulting from thermal burns, 27

Cancer
Anatomic foramina in thyroid cartilage: incidence and implications for spread of laryngeal cancer, 421
Blood transfusions and recurrence in head and neck cancer, 171
Growth and chemosensitivity of human head and neck cancers implanted under kidney capsule of cyclosporine-immunosuppressed mice, 455
Indirect videolaryngoscopy versus direct endoscopy for larynx and pharynx cancer staging. Toward elimination of preliminary direct laryngoscopy, 693
Interleukin-2 release from lymphocytes of patients with head and neck cancer, 179
Internal anatomy of larynx and spread of cancer, 228
Isolated pulmonary nodules in head and neck cancer patients, 113
Microbiology of wound infection after head and neck cancer surgery, 323
Partial laryngectomy and radiotherapy for supraglottic cancer: conservative approach, 125
Utility of near-total laryngectomy for supraglottic, pharyngeal, base-of-tongue, and other cancers, 2
What have whole organ sections contributed to treatment of laryngeal cancer? 661

Carcinoma
Adenoid cystic carcinoma of parotid gland: review of surgical management with reference to facial nerve, 845
Basaloid-squamous carcinomas of upper aerodigestive tracts, 919
Carcinoma of maxillary sinus with pterygoid invasion, 485
Computed tomography in patients with laryngeal carcinoma: clinical perspective, 55
Definitive radiotherapy in management of stage I and II carcinomas of glottis, 235
Laser surgery for vocal cord carcinoma involving anterior commissure, 105
Natural history of treated T1N0 squamous carcinoma of glottis, 217
Review of neuroendocrine carcinomas of larynx, 780
Squamous cell carcinoma of thyroid: diagnostic dilemma, 59

Carcinosarcoma
Salivary gland carcinosarcoma: true malignant mixed tumor, 611

Carotid artery
Extracranial carotid artery aneurysm: unusual neck mass in young adult, 396

Cartilage
Laryngotracheal reconstruction with composite nasal septal cartilage grafts, 581

Cavernous hemangioma
Red blood cell scan in cavernous hemangioma of larynx, 707

Ceftazidime
Use of ceftazidime for malignant external otitis, 721

Central nervous system
Central nervous system studies, suppl 143:40
Related studies of central nervous system, suppl 143:42
Surgical implantation and biocompatibility of central nervous system auditory prostheses, 965

Cervical vertebrae
Endoscopic problems due to cervical vertebral diseases, 597

Choanae
Choanal atresia: treatment trends in 47 patients over 33 years, 110

Cholesteatoma
Comparative histology of tympanic membrane and its relationship to cholesteatoma, 761
Cytokeratin patterns of tissues related to cholesteatoma pathogenesis, 635

Chondromyxoid fibroma
Chondromyxoid fibroma, 571

Cilia
Increased ciliary beating frequency of nasal mucosa following immunotherapy for allergy, 350

Cleft
Minor congenital laryngeal clefts: diagnosis and classification, 417

Ventral cleft of larynx in adult. Case report, 66

Clinical relevance
Temporal bone findings of clinical relevance, suppl 143:46

Cochlea
Cochlear hair cell stereocilia loss in LP/J mice with bone dysplasia of middle ear, 461
Computer-aided three-dimensional reconstruction: method of measuring temporal bone structures including length of cochlea, 515
Effects of nitrogen mustard-N-oxide on ionic activities of inner ear fluid and ionic permeabilities of cochlear partition in guinea pig, 379

Cochlear implant
Audiologic results following reimplantation of cochlear implants, suppl 142:12
Cochlear implant revision: effects of reimplantation on cochlea, 813
Comparison of sensory aids in deaf children, suppl 142:2
Cylindrical cochlear electrode array for use in humans, 466
Survival of spiral ganglion cells in profound sensorineural hearing loss: implications for cochlear implantation, 411
Telephone speech comprehension with use of Nucleus cochlear implant, suppl 142:8
Temporal bone computed tomography in preoperative evaluation for cochlear implantation, 346

Collagen
Type II collagen distribution in ear of guinea pig fetus, 648

Collections of temporal bones
Current status of older temporal bone collections, suppl 143:10

Compliance
Promotion of patient appointment compliance in indigent pediatric medical care by use of microcomputer, 755

Complications
Complications following rhinotomy. Review of 148 patients, 684

Computed tomography
Computed tomography in patients with laryngeal carcinoma: clinical perspective, 55
Computed tomography of internal jugular vein thrombosis, 318
Temporal bone computed tomography in preoperative evaluation for cochlear implantation, 346

Congenital anomalies
Congenital anomalies of eustachian tube in Down syndrome. Histopathologic case report, 543
Congenital subglottic stenosis: elliptical cricoid cartilage, 702
External and middle ear malformations: autosomal dominant genetic transmission, 772
G syndrome and its otolaryngologic manifestations, 185
Minor congenital laryngeal clefts: diagnosis and classification, 417
Otologic histopathology of Fabry's disease, 359
Progressive hearing loss in Usher's syndrome, 863
Treacher Collins syndrome: otologic challenge, 807

Cricoid
Congenital subglottic stenosis: elliptical cricoid cartilage, 702

Cylindroma
Dermal eccrine cylindroma, 991

Cyst
Improved surgical technique for epidermoid cysts of vocal fold, 791
Oncocytic cyst of larynx, 240
Posterior subglottic cyst, 81

Cytokeratin
Cytokeratin patterns of tissues related to cholesteatoma pathogenesis, 635

Data collection
Premortem data collection, suppl 143:45

Development
Type II collagen distribution in ear of guinea pig fetus, 648

Digital filtering
Analog and digital filtering of brain stem auditory evoked response, 508

Dizziness
Vascular dizziness and transcranial Doppler ultrasonography, suppl 141

Doppler ultrasonography
Vascular dizziness and transcranial Doppler ultrasonography, suppl 141

Down syndrome
Congenital anomalies of eustachian tube in Down syndrome. Histopathologic case report, 543

Dysphonia
Laryngeal framework surgery in management of spasmodic dysphonia, 52
Surgical correction of dysphonia due to bowing of vocal cords, 41

Dystonia
Botulinum toxin injection for treatment of oromandibular dystonia, 93

Ear
Effects of blast overpressure on ear, suppl 140
See also External ear, Inner ear, Middle ear

Eardrum rupture
Physical correlates of eardrum rupture, suppl 140:35

Editorials, 1, 243

Electrocochleography
Electrocochleographic changes in endolymphatic hydrops induced by type II collagen immunization through stylomastoid foramen, 556

Electrode
Cylindrical cochlear electrode array for use in humans, 466

Electroneurography
Facial nerve electroneurography with implanted electrodes. Experimental study in rabbit, 434

Endolymph
Immune response of endolymphatic sac to horseradish peroxidase: immunologic route from middle ear to inner ear, 975
Lack of effect of carbonic anhydrase inhibition on direct measurements of endolymph bicarbonate, 209

Endolymphatic hydrops
Electrocochleographic changes in endolymphatic hydrops induced by type II collagen immunization through stylomastoid foramen, 556
Meniere's syndrome and endolymphatic hydrops. Double-blind temporal bone study, 873

Endoscopy
Endoscopic problems due to cervical vertebral diseases, 597

Endoscopy and KTP/532 laser for nasal sinus disease, 46
Indirect videolaryngoscopy versus direct endoscopy for larynx and pharynx cancer staging. Toward elimination of preliminary direct laryngoscopy, 693

Endotoxin
Effect of prostaglandin E2 and bacterial endotoxin on rate of dye transport in eustachian tube of chinchilla, 278

Endotracheal tube
Model of new generation of tracheostomy and endotracheal tubes. Preliminary study of sensors to monitor obstruction, 157
Prospective studies evaluating standard endotracheal tube and prototype endotracheal tube, 935

Epidemiology
Otitis media in first year of life in two Eskimo communities, 200

Epiglottitis
Recurrent adult acute epiglottitis: role of lingual tonsillectomy, 602

Esophagus
Acute airway obstruction and achalasia of esophagus, 641
Duration and frequency characteristics of tracheoesophageal speech, 960

Esthesioneuroepithelioma
Chemically induced esthesioneuroepithelioma: ultrastructural findings, 256

Ethmoid
Long-term results of ethmoid surgery, 699

Eustachian tube
Age-related morphologic differences in components of eustachian tube/middle ear system, 854
Congenital anomalies of eustachian tube in Down syndrome. Histopathologic case report, 543
Effect of prostaglandin E2 and bacterial endotoxin on rate of dye transport in eustachian tube of chinchilla, 278
Eustachian tube lumen: comparison between normal and inflamed specimens, 630
Gaseous pathways in atelectatic ears, 355
Mortality after nasopharyngeal radium irradiation for eustachian tube dysfunction, 839

Evoked acoustic emissions
Clinical applications of evoked acoustic emissions: results in normally hearing and hearing-impaired subjects, 326

Ewing's sarcoma
Ewing's sarcoma of bone and soft tissues, 400

Extended facial recess
Dimensions of extended facial recess, 336

External ear
External and middle ear malformations: autosomal dominant genetic transmission, 772

Extracochlear prosthesis
Implantation of Melbourne/Cochlear multiple-electrode extracochlear prosthesis, 591

Fabry's disease
Otologic histopathology of Fabry's disease, 359

Fat-graft reconstruction
Phonosurgical studies: fat-graft reconstruction of injured canine vocal cords, 668

Fetor
Fetor from ulcerated head and neck tumors: causation and therapy, 615

Fistula
Pharyngeal fistulas in postoperative hypothyroid patients, 267
Role of perilymphatic fistula in sudden hearing loss: animal model, 491

Fixation suppression
Effect of temperature on fixation suppression ability in normal subjects: need for temperature- and age-dependent normal values, 369

Foramina
Anatomic foramina in thyroid cartilage: incidence and implications for spread of laryngeal cancer, 421

G syndrome
G syndrome and its otolaryngologic manifestations, 185

Gentamicin
Auditory nerve and brain stem evoked response thresholds in infants treated with gentamicin as neonates, 283

Giant cell arteritis
Speech pathology in giant cell arteritis. Review and case report, 859

Glomus
Glomus vagale tumors, 21

Glottis
Definitive radiotherapy in management of stage I and II carcinomas of glottis, 235
Natural history of treated T1N0 squamous carcinoma of glottis, 217

Graft
Laryngotracheal reconstruction with composite nasal septal cartilage grafts, 581

Harvesting temporal bones
European functional histopathology program, suppl 143:14
Harvesting and fixing human temporal bones, suppl 143:24
Harvesting brains, suppl 143:19
Harvesting temporal bones: clinician's contribution, suppl 143:17
Harvesting temporal bones: United States experience, suppl 143:17
Human temporal bone studies in Japan, suppl 143:15
Techniques for removal and processing of temporal bone specimens, including eustachian tube and accessory structures, suppl 143:22

Health service support
Otolaryngic health service support in Airland Battle, suppl 140:5

Hearing
Audiologic threshold monitoring of patients receiving ototoxic drugs. Preliminary report, 950
Clinical applications of evoked acoustic emissions: results in normally hearing and hearing-impaired subjects, 326
Evaluation of pure tone and speech discrimination changes in Usher's syndrome, 364
Hearing in chronic suppurative otitis media, 245
Progressive hearing loss in Usher's syndrome, 863
Role of perilymphatic fistula in sudden hearing loss: animal model, 491

Hemangioma
Facial nerve hemangioma, 160
Hemangioma of zygomatic bone, 655

Red blood cell scan in cavernous hemangioma of larynx, 707

Histochemistry
Histochemistry of human temporal bone, suppl 143:43

Histology
Comparative histology of tympanic membrane and its relationship to cholesteatoma, 761
Early histopathologic studies of ear disease and deafness, suppl 143:6
Otologic histopathology of Fabry's disease, 359
Studies of temporal bone histopathology in humans, suppl 143:5

Historical perspective
Blast injury of ear: historical perspective, suppl 140:9

How to Write a Scientific Paper, 243

Hyaluronan
Hyaluronan in experimental serous and purulent otitis media, 736

Hydroxylapatite
Hydroxylapatite for laryngotracheal framework reconstruction, 713

Imaging Case Study of the Month
Carcinoma of maxillary sinus with pterygoid invasion, 485
Computed tomography of hypoplastic maxillary sinus, 916
Computed tomography of internal jugular vein thrombosis, 318
Extracranial carotid artery aneurysm: unusual neck mass in young adult, 396
Facial nerve hemangioma, 160
Gadolinium-enhanced facial nerves: accompanying bilateral acoustic tumors in patient with neurofibromatosis, 747
Hemangioma of zygomatic bone, 655
Magnetic resonance imaging of Thornwaldt's cyst, 569
Maxillary sinus neoplasm, 988
Multiple frontoethmoid mucoceles, 831
Oncocytic cyst of larynx, 240
Posterior subglottic cyst, 81

Immunity
Antigen-specific immune response in inner ear, 447
Growth and chemosensitivity of human head and neck cancers implanted under kidney capsule of cyclosporine-immunosuppressed mice, 455
Immune response of endolymphatic sac to horseradish peroxidase: immunologic route from middle ear to inner ear, 975

Immunoglobulins
Induction of antigen-specific IgA-forming cells in upper respiratory mucosa, 523
Secretory IgA and bacterial adherence to nasal mucosal cells, 273

Implant
Surgical implantation and biocompatibility of central nervous system auditory prostheses, 965
See also Cochlear implant

Indigent medical care
Promotion of patient appointment compliance in indigent pediatric medical care by use of microcomputer, 755

Inner ear
Antigen-specific immune response in inner ear, 447
High antibody levels against mouse laminin with specificity for galactosyl-(α1-3)galactose in patients with inner ear diseases, 537

Interleukin-2
Interleukin-2 release from lymphocytes of patients with head and neck cancer, 179

Intubation
Bedside videolaryngoscopic assessment of intubation trauma, 586
Prospective studies evaluating standard endotracheal tube and prototype endotracheal tube, 935

Jaundice
Brain stem auditory evoked potentials in jaundiced Gunn rats, 308

Laryngectomy
Partial laryngectomy and radiotherapy for supraglottic cancer: conservative approach, 125
Utility of near-total laryngectomy for supraglottic, pharyngeal, base-of-tongue, and other cancers, 2
Voice restoration following laryngectomy: role of primary versus secondary tracheoesophageal puncture, 70

Laryngitis
Gastroesophageal reflux and posterior laryngitis, 405

Laryngotracheal reconstruction
Advantages of rotary door flap in laryngotracheal reconstruction: is skeletal support necessary? 37
Hydroxylapatite for laryngotracheal framework reconstruction, 713
Laryngotracheal reconstruction with composite nasal septal cartilage grafts, 581

Larynx
Actomyosin adenosine triphosphatase activities of cat infrahyoid muscles, 202
Acute management of laryngeal trauma. Update, 98
Applications of voice prosthesis during laryngectomy, 921
Asymmetry of laryngeal framework: morphologic study of cadaver larynges, 135
Botulinum toxin for relief of bilateral abductor paralysis of larynx: histologic study in animal model, 213
Cartilaginous tumors of trachea and larynx, 31
Contractile properties of canine thyroarytenoid muscle reinnervated from ansa cervicalis, 153
Current and future horizons in laryngeal and voice research, 145
Effect of vocal fold augmentation on laryngeal vibration in simulated recurrent laryngeal nerve paralysis: study of Teflon and Phonogel, 220
Effects of cricothyroid muscle contraction on laryngeal resistance and glottic area, 119
Indirect videolaryngoscopy versus direct endoscopy for larynx and pharynx cancer staging. Toward elimination of preliminary direct laryngoscopy, 693
Internal anatomy of larynx and spread of cancer, 228
Laryngeal brain stem evoked response, 677
Laryngeal framework surgery in management of spasmodic dysphonia, 52
Laryngeal synkinesis: its significance to laryngologist, 87
Long-term results of nerve-muscle pedicle reinnervation for laryngeal paralysis, 674
Minor congenital laryngeal clefts: diagnosis and classification, 417
New microlaryngeal instruments for phonatory surgery and pediatric applications, 821
Newer technique of laryngeal reinnervation: superior laryngeal nerve (motor branch) as driver of posterior cricoarytenoid muscle, 907
Newer techniques of laryngeal reinnervation, 8
Oncocytic cyst of larynx, 240
Osteosarcoma of larynx, 971
Phonosurgery: indications and pitfalls, 577
Red blood cell scan in cavernous hemangioma of larynx, 707
Review of neuroendocrine carcinomas of larynx, 780
Sectional anatomy of larynx: implications for transcutaneous

approach to endolaryngeal structures, 141
Selective reinnervation of abductor and adductor muscles of canine larynx after recurrent nerve paralysis, 530
Transmucosal electrical stimulation of laryngeal muscles, 339
Ventral cleft of larynx in adult. Case report, 66
What have whole organ sections contributed to treatment of laryngeal cancer? 661

Laser
Carbon dioxide laser posterior cordectomy for treatment of bilateral vocal cord paralysis, 930
Endoscopy and KTP/532 laser for nasal sinus disease, 46
Laser surgery for vocal cord carcinoma involving anterior commissure, 105
Posttracheotomy granulation tissue managed by carbon dioxide laser excision, 828
Total cervical tracheal stenosis: treatment by laser, dilation, and stenting, 890

Letters to the Editor, 85, 322, 573, 574, 753, 754, 836

Lipoma
Primary intravestibular lipoma, 393

Low frequency oscillatory ventilation
Low frequency oscillatory ventilation through suction channel of pediatric bronchoscope, 251

Lung
Isolated pulmonary nodules in head and neck cancer patients, 113

Lymphadenopathy
Sinus histiocytosis with massive lymphadenopathy, 241

Lymphocytes
Interleukin-2 release from lymphocytes of patients with head and neck cancer, 179

Mastoid
Mastoid pneumatization in otosclerosis, 451

Meniere's disease
Long-term results of sacculotomy in older patients, 803
Meniere's syndrome and endolymphatic hydrops. Double-blind temporal bone study, 873

Microbiology
Microbiology of wound infection after head and neck cancer surgery, 323

Microcomputer
Promotion of patient appointment compliance in indigent pediatric medical care by use of microcomputer, 755

Microdissection
Microdissection in human temporal bone morphology, suppl 143:25

Microscopy
Application of transmission electron microscopy to human otopathology, suppl 143:33
Light and electron microscopy on same temporal bone, suppl 143:40

Microslicing, suppl 143:39

Middle ear
Acute effects of sulfur dioxide exposure on middle ear mucosa, 301
Adenomatous tumors of middle ear, 749
Age-related morphologic differences in components of eustachian tube/middle ear system, 854
Audiometric results of TORP and PORP middle ear reconstruction, 429
Auditory brain stem response monitoring during middle ear surgery, 605
Biochemical study of protease inhibitors in normal chinchilla middle ear, 472
Cochlear hair cell stereocilia loss in LP/J mice with bone dysplasia of middle ear, 461
External and middle ear malformations: autosomal dominant genetic transmission, 772
Mucociliary disease of middle ear during experimental otitis media with effusion induced by bacterial endotoxin, 479

Military operations
Blast injuries of ear in military operations, suppl 140:3

Modeling
Use of modeling in predicting tympanic membrane rupture, suppl 140:53

Mona Lisa syndrome
Mona Lisa syndrome: solving enigma of Gioconda smile, 196

Morphometry
Age-related morphologic differences in components of eustachian tube/middle ear system, 854
Asymmetry of laryngeal framework: morphologic study of cadaver larynges, 135
Computer-aided three-dimensional reconstruction: method of measuring temporal bone structures including length of cochlea, 515
Dimensions of and vibrations in round window membrane in cats, 438
Dimensions of extended facial recess, 336
Nerve fiber analysis of facial nerve, 732
Thickness of lateral surface of temporal bone in children, 726

Mucocele
Multiple frontoethmoid mucoceles, 831

Multiple-electrode extracochlear prosthesis
Implantation of Melbourne/Cochlear multiple-electrode extracochlear prosthesis, 591

Muscle
Actomyosin adenosine triphosphatase activities of cat infrahyoid muscles, 202
Contractile properties of canine thyroarytenoid muscle reinnervated from ansa cervicalis, 153
Effects of cricothyroid muscle contraction on laryngeal resistance and glottic area, 119
Effects of recurrent laryngeal nerve transection and vagotomy on respiratory contraction of cricothyroid muscle, 373
Selective reinnervation of abductor and adductor muscles of canine larynx after recurrent nerve paralysis, 530

Naproxen
Effect of naproxen, prostaglandin inhibitor, on acute otitis media and persistence of middle ear effusion in children, 389

Nasal mucosa
Increased ciliary beating frequency of nasal mucosa following immunotherapy for allergy, 350
Secretory IgA and bacterial adherence to nasal mucosal cells, 273

Nasopharynx
Large pituitary adenomas with extension into nasopharynx. Report of three cases with review of literature, 618
Mortality after nasopharyngeal radium irradiation for eustachian tube dysfunction, 839
Surgical experience with juvenile nasopharyngeal angiofibroma, 269
Video nasopharyngoscopy: comparison of fiberscopic, telescopic, and microscopic documentation, 15

Nerve
Adenoid cystic carcinoma of parotid gland: review of surgical management with reference to facial nerve, 845
Contractile properties of canine thyroarytenoid muscle reinnervated from ansa cervicalis, 153
Effects of recurrent laryngeal nerve transection and vagotomy on respiratory contraction of cricothyroid muscle, 373
Facial nerve electroneurography with implanted electrodes. Experimental study in rabbit, 434
Facial nerve hemangioma, 160
Facial nerve paralysis with benign parotid masses, 644
Gadolinium-enhanced facial nerves: accompanying bilateral acoustic tumors in patient with neurofibromatosis, 747
Implantation of recurrent laryngeal nerve stimulator for treatment of spastic dysphonia, 130
Long-term results of nerve-muscle pedicle reinnervation for laryngeal paralysis, 674
Nerve fiber analysis of facial nerve, 732
Newer technique of laryngeal reinnervation: superior laryngeal nerve (motor branch) as driver of posterior cricoarytenoid muscle, 907

Neurofibromatosis
Gadolinium-enhanced facial nerves: accompanying bilateral acoustic tumors in patient with neurofibromatosis, 747

Nitrogen mustard-N-oxide
Effects of nitrogen mustard-N-oxide on ionic activities of inner ear fluid and ionic permeabilities of cochlear partition in guinea pig, 379

Nortriptyline
Treatment of depressed tinnitus patients with nortriptyline, 867

Obituary
Michele Arslan, 403

Obstruction
Acute airway obstruction and achalasia of esophagus, 641
Acute airway obstruction due to necrotizing tracheobronchial aspergillosis in immunocompromised patients: new clinical entity, 718
Delayed airway obstruction and neck abscess following manual strangulation injury, 824
Model of new generation of tracheostomy and endotracheal tubes. Preliminary study of sensors to monitor obstruction, 157
Obstructive sleep apnea syndrome in sickle cell disease, 174

Olfactory mucosa
Immunohistochemical analysis of olfactory mucosa by use of antibodies to brain proteins and cytokeratin, 384

Optokinetic afternystagmus
Optokinetic afternystagmus in humans: normal values of amplitude, time constant, and asymmetry, 741

Orbit
Sclerosing orbital pseudotumor: unique clinicopathologic entity, 496

Ossicular replacement prosthesis
Audiometric results of TORP and PORP middle ear reconstruction, 429

Osteoma
Frontal sinus osteoma, 896

Osteomyelitis
Osteomyelitis of frontal bone, 848

Osteosarcoma
Osteosarcoma of larynx, 971

Ostioplasty
Reevaluation of maxillary sinus surgery: experimental study in rabbits, 901

Otitis externa
Use of ceftazidime for malignant external otitis, 721

Otitis media
Air conduction thresholds and secretory otitis media: conventional and extra-high frequency audiometric comparison, 767
Chronic secretory otitis media: effects of surgical management, suppl 138
Effect of naproxen, prostaglandin inhibitor, on acute otitis media and persistence of middle ear effusion in children, 389
Eustachian tube lumen: comparison between normal and inflamed specimens, 630
Hearing in chronic suppurative otitis media, 245
Hyaluronan in experimental serous and purulent otitis media, 736
Mucociliary disease of middle ear during experimental otitis media with effusion induced by bacterial endotoxin, 479
Otitis media in first year of life in two Eskimo communities, 200
Prognosis of secretory otitis media in relation to viscoelasticity of effusions in children, 443
Protease inhibitors in middle ear effusions from experimental otitis media with effusion: kinetics of α1-antitrypsin and α2-macroglobulin levels, 287
Proteases and protease inhibitors in immune complex otitis media in chinchillas, 563
Quantitative bacterial cultures and beta-lactamase activity in chronic suppurative otitis media, 293
Recent advances in otitis media. Report of the fourth research conference, suppl 139
Round window membrane and perilymph in experimental otitis media with effusion, 980

Otosclerosis
Mastoid pneumatization in otosclerosis, 451

Ototoxicity
Audiologic threshold monitoring of patients receiving ototoxic drugs. Preliminary report, 950

Panel reports, Fourth Research Conference on Otitis Media With Effusion
Anatomy, cell biology, and pathology, suppl 139:19
Animal models of otitis media, suppl 139:33
Complications and sequelae, suppl 139:46
Definition and classification, suppl 139:10
Diagnosis and screening, suppl 139:39
Epidemiology and natural history, suppl 139:11
Eustachian tube and middle ear physiology and pathophysiology, suppl 139:14
Management, suppl 139:42
Microbiology, immunology, biochemistry, and vaccination, suppl 139:23

Paralysis
Botulinum toxin for relief of bilateral abductor paralysis of larynx: histologic study in animal model, 213
Carbon dioxide laser posterior cordectomy for treatment of bilateral vocal cord paralysis, 930
Effect of vocal cord augmentation on laryngeal vibration in simulated recurrent laryngeal nerve paralysis: study of Teflon and Phonogel, 220
Facial nerve paralysis with benign parotid masses, 644
Long-term results of nerve-muscle pedicle reinnervation for laryngeal paralysis, 674
Selective reinnervation of abductor and adductor muscles of canine larynx after recurrent nerve paralysis, 530

Parapharyngeal space diseases
Parapharyngeal and retropharyngeal space diseases, 320

Parotid gland
Adenoid cystic carcinoma of parotid gland: review of surgical management with reference to facial nerve, 845
Sialocysts of parotid glands, 487

Parotid masses
Facial nerve paralysis with benign parotid masses, 644

Pathology Consultation
Adenomatous tumors of middle ear, 749
Basaloid-squamous carcinomas of upper aerodigestive tracts, 919
Chondromyxoid fibroma, 571
Dermal eccrine cylindroma, 991
Epithelioid sarcoma, 659
Ewing's sarcoma of bone and soft tissues, 400
Low-grade and high-grade adenocarcinomas of salivary duct system, 162
Parapharyngeal and retropharyngeal space diseases, 320
Relapsing polychondritis, 83
Sialocysts of parotid glands, 487
Sinus histiocytosis with massive lymphadenopathy, 241
Xanthogranuloma, 834

Perilymph
Role of perilymphatic fistula in sudden hearing loss: animal model, 491
Round window membrane and perilymph in experimental otitis media with effusion, 980

Phonation
Regional blood flow to canine vocal fold at rest and during phonation, 796

Phonosurgery
New microlaryngeal instruments for phonatory surgery and pediatric applications, 821
Phonosurgery: indications and pitfalls, 577
Phonosurgical studies: fat-graft reconstruction of injured canine vocal cords, 668
Recent modifications in thyroplasty type I, 777

Polychondritis
Relapsing polychondritis, 83

Postural control
Effects of unilateral loss of vestibular function on vestibulo-ocular reflex and postural control, 884

Prostaglandins
Effect of naproxen, prostaglandin inhibitor, on acute otitis media and persistence of middle ear effusion in children, 389
Effect of prostaglandin E2 and bacterial endotoxin on rate of dye transport in eustachian tube of chinchilla, 278

Protease inhibitors
Biochemical study of protease inhibitors in normal chinchilla middle ear, 472
Protease inhibitors in middle ear effusions from experimental otitis media with effusion: kinetics of α1-antitrypsin and α2-macroglobulin levels, 287
Proteases and protease inhibitors in immune complex otitis media in chinchillas, 563

Pseudotumor
Sclerosing orbital pseudotumor: unique clinicopathologic entity, 496

Radiotherapy
Definitive radiotherapy in management of stage I and II carcinomas of glottis, 235
Mortality after nasopharyngeal radium irradiation for eustachian tube dysfunction, 839
Partial laryngectomy and radiotherapy for supraglottic cancer: conservative approach, 125

Red blood cell scan
Red blood cell scan in cavernous hemangioma of larynx, 707

Reference marks (celloidin specimens)
Device for making reference marks, suppl 143:38

Reflux
Detection of gastroesophageal reflux in head and neck: role of scintigraphy, 74
Gastroesophageal reflux and posterior laryngitis, 405

Reimplantation
Audiologic results following reimplantation of cochlear implants, suppl 142:12
Cochlear implant revision: effects of reimplantation on cochlea, 813

Reinnervation
Long-term results of nerve-muscle pedicle reinnervation for laryngeal paralysis, 674
New technique of laryngeal reinnervation: superior laryngeal nerve (motor branch) as driver of posterior cricoarytenoid muscle, 907
Newer techniques of laryngeal reinnervation, 8

Respiration
Effects of recurrent laryngeal nerve transection and vagotomy on respiratory contraction of cricothyroid muscle, 373

Respiratory mucosa
Induction of antigen-specific IgA-forming cells in upper respiratory mucosa, 523

Rhinotomy
Complications following rhinotomy. Review of 148 patients, 684

Rotary door flap
Advantages of rotary door flap in laryngotracheal reconstruction: is skeletal support necessary? 37

Rotational testing
Earth horizontal axis rotational responses in patients with unilateral peripheral vestibular deficits, 551
Effect of eyelid closure and vocalization upon vestibulo-ocular reflex during rotational testing, 548
Eyes open versus eyes closed: effect on human rotational testing, 625

Round window membrane
Dimensions of and vibrations in round window membrane in cats, 438
Round window membrane and perilymph in experimental otitis media with effusion, 980

Sacculotomy
Long-term results of sacculotomy in older patients, 803

Salivary duct
Low-grade and high-grade adenocarcinomas of salivary duct system, 162

Salivary gland
Salivary gland carcinosarcoma: true malignant mixed tumor, 611

Sarcoidosis
Flexible transbronchial needle aspiration for diagnosis of sarcoidosis, 298

Sarcoma
Epithelioid sarcoma, 659

Scintigraphy
Detection of gastroesophageal reflux in head and neck: role of scintigraphy, 74

Sclerosis
Sclerosing orbital pseudotumor: unique clinicopathologic entity, 496

Sensory aids
Comparison of sensory aids in deaf children, suppl 142:2

Sialocyst
Sialocysts of parotid glands, 487

Sickle cell disease
Obstructive sleep apnea syndrome in sickle cell disease, 174

Sinus
Bacteriology of chronic maxillary sinusitis in adults, 426
Carcinoma of maxillary sinus with pterygoid invasion, 485
Computed tomography of hypoplastic maxillary sinus, 916
Endoscopy and KTP/532 laser for nasal sinus disease, 46
Frontal sinus osteoma, 896
Long-term results of ethmoid surgery, 699
Maxillary sinus neoplasm, 988
Reevaluation of maxillary sinus surgery: experimental study in rabbits, 901

Sinus histiocytosis
Sinus histiocytosis with massive lymphadenopathy, 241

Sleep apnea
Uvulopalatopharyngoplasty: postoperative management and evaluation of results, 502

Spastic dysphonia
Implantation of recurrent laryngeal nerve stimulator for treatment of spastic dysphonia, 130

Speech
Duration and frequency characteristics of tracheoesophageal speech, 960
Speech pathology in giant cell arteritis. Review and case report, 859

Spiral ganglion
Survival of spiral ganglion cells in profound sensorineural hearing loss: implications for cochlear implantation, 411

Stenosis
Congenital subglottic stenosis: elliptical cricoid cartilage, 702
Ferret model for acquired subglottic stenosis, 910
Management of patients with glottic and subglottic stenosis resulting from thermal burns, 27
Sliding flap tracheoplasty, 926
Total cervical tracheal stenosis: treatment by laser, dilation, and stenting, 890

Sternomastoid tumor
Sternomastoid tumor of infancy, 955

Strangulation
Delayed airway obstruction and neck abscess following manual strangulation injury, 824

Sulfur dioxide
Acute effects of sulfur dioxide exposure on middle ear mucosa, 301

Surface preparations
Surface preparations for human temporal bone studies, suppl 143:28

Synkinesis
Laryngeal synkinesis: its significance to laryngologist, 87

Telephone speech comprehension
Telephone speech comprehension with use of Nucleus cochlear implant, suppl 142:8

Temperature
Effect of temperature on fixation suppression ability in normal subjects: need for temperature- and age-dependent normal values, 369

Temporal bone
Computer-aided three-dimensional reconstruction: method of measuring temporal bone structures including length of cochlea, 515
Dimensions of extended facial recess, 336
Human Temporal Bone Research Workshop report, suppl 143
Temporal bone computed tomography in preoperative evaluation for cochlear implantation, 346
Thickness of lateral surface of temporal bone in children, 726

Thornwaldt's cyst
Magnetic resonance imaging of Thornwaldt's cyst, 569

Three-dimensional reconstruction
Computer-aided three-dimensional reconstruction and measurement of temporal bone structures, suppl 143:25

Thrombosis
Computed tomography of internal jugular vein thrombosis, 318

Thyroid
Anatomic foramina in thyroid cartilage: incidence and implications for spread of laryngeal cancer, 421
Pharyngeal fistulas in postoperative hypothyroid patients, 267
Squamous cell carcinoma of thyroid: diagnostic dilemma, 59

Thyroplasty
Recent modifications in thyroplasty type I, 777

Tinnitus
Treatment of depressed tinnitus patients with nortriptyline, 867

Tonsil
Recurrent adult acute epiglottitis: role of lingual tonsillectomy, 602
Recurrent tonsillitis: histologic and bacteriologic evaluation, 332

Trachea
Cartilaginous tumors of trachea and larynx, 31
Sliding flap tracheoplasty, 926

Tracheotomy
Model of new generation of tracheostomy and endotracheal tubes. Preliminary study of sensors to monitor obstruction, 157
Posttracheotomy granulation tissue managed by carbon dioxide laser excision, 828

Training
Current status of training of temporal bone pathologists and technicians, suppl 143:47
Training of temporal bone histopathologists and technicians: past and present, suppl 143:11

Transbronchial needle aspiration
Flexible transbronchial needle aspiration for diagnosis of sarcoidosis, 298

Transcutaneous approach
Sectional anatomy of larynx: implications for transcutaneous approach to endolaryngeal structures, 141

Transmucosal electrical stimulation
Transmucosal electrical stimulation of laryngeal muscles, 339

Trauma
Acute management of laryngeal trauma. Update, 98
Bedside videolaryngoscopic assessment of intubation trauma, 586

Treacher Collins syndrome
Treacher Collins syndrome: otologic challenge, 807

Treatment
Treatment of blast injury to ear, suppl 140:13

Tumor
Cartilaginous tumors of trachea and larynx, 31
Fetor from ulcerated head and neck tumors: causation and therapy, 615
Gadolinium-enhanced facial nerves: accompanying bilateral acoustic tumors in patient with neurofibromatosis, 747
Glomus vagale tumors, 21
Salivary gland carcinosarcoma: true malignant mixed tumor, 611
Sternomastoid tumor of infancy, 955

Tympanic membrane
Comparative histology of tympanic membrane and its relationship to cholesteatoma, 761

Ulceration
Fetor from ulcerated head and neck tumors: causation and therapy, 615

Ultrastructure
Chemically induced esthesioneuroepithelioma: ultrastructural findings, 256

Usher's syndrome
Evaluation of pure tone and speech discrimination changes in Usher's syndrome, 364
Progressive hearing loss in Usher's syndrome, 863

Uvulopalatopharyngoplasty
Uvulopalatopharyngoplasty: postoperative management and evaluation of results, 502

Vertigo
Primary intravestibular lipoma, 393
Vestibulospinal findings in two syndromes with spontaneous vertigo attacks, 191

Vestibular deficits
Earth horizontal axis rotational responses in patients with unilateral peripheral vestibular deficits, 551

Vestibulo-ocular reflex
Effect of eyelid closure and vocalization upon vestibulo-ocular reflex during rotational testing, 548
Effects of unilateral loss of vestibular function on vestibulo-ocular reflex and postural control, 884
Eyes open versus eyes closed: effect on human rotational testing, 625
Optokinetic afternystagmus in humans: normal values of amplitude, time constant, and asymmetry, 741

Vestibulospinal reflex
Vestibulospinal findings in two syndromes with spontaneous vertigo attacks, 191

Vibration
Dimensions of and vibrations in round window membrane in cats, 438

Video
Bedside videolaryngoscopic assessment of intubation trauma, 586
Indirect videolaryngoscopy versus direct endoscopy for larynx and pharynx cancer staging. Toward elimination of preliminary direct laryngoscopy, 693
Video nasopharyngoscopy: comparison of fiberscopic, telescopic, and microscopic documentation, 15

Viscoelasticity
Prognosis of secretory otitis media in relation to viscoelasticity of effusions in children, 443

Vocal cords
Carbon dioxide laser posterior cordectomy for treatment of bilateral vocal cord paralysis, 930
Improved surgical technique for epidermoid cysts of vocal fold, 791
Laser surgery for vocal cord carcinoma involving anterior commissure, 105
Phonosurgical studies: fat-graft reconstruction of injured canine vocal cords, 668
Regional blood flow to canine vocal fold at rest and during phonation, 796
Surgical correction of dysphonia due to bowing of vocal cords, 41

Voice
Applications of voice prosthesis during laryngectomy, 921
Current and future horizons in laryngeal and voice research, 145
Voice restoration following laryngectomy: role of primary versus secondary tracheoesophageal puncture, 70

Whole organ sections
What have whole organ sections contributed to treatment of laryngeal cancer? 661

Wound infection
Microbiology of wound infection after head and neck cancer surgery, 323

Xanthogranuloma
Xanthogranuloma, 834